

N A T I O N A L



M O T O R C A R S

National



NATIONAL MOTOR CARS

OPEN AND CLOSED MODELS



NATIONAL MOTOR CAR & VEHICLE CORPORATION
TWENTY THIRD SUCCESSFUL YEAR • INDIANAPOLIS, INDIANA, U.S.A.

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NATIONAL MOTOR CAR & VEHICLE CORPORATION
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THE HERITAGE OF SUCCESS

THERE is probably no other single purchase that so completely reflects its maker as does the choice of a motor car. It is as natural for Nationals to be owned and driven in the dual rôle of companion and servitor by certain men and women as it is for these same persons to be representative of the better social and business life of their communities.

For the position of National is unique.

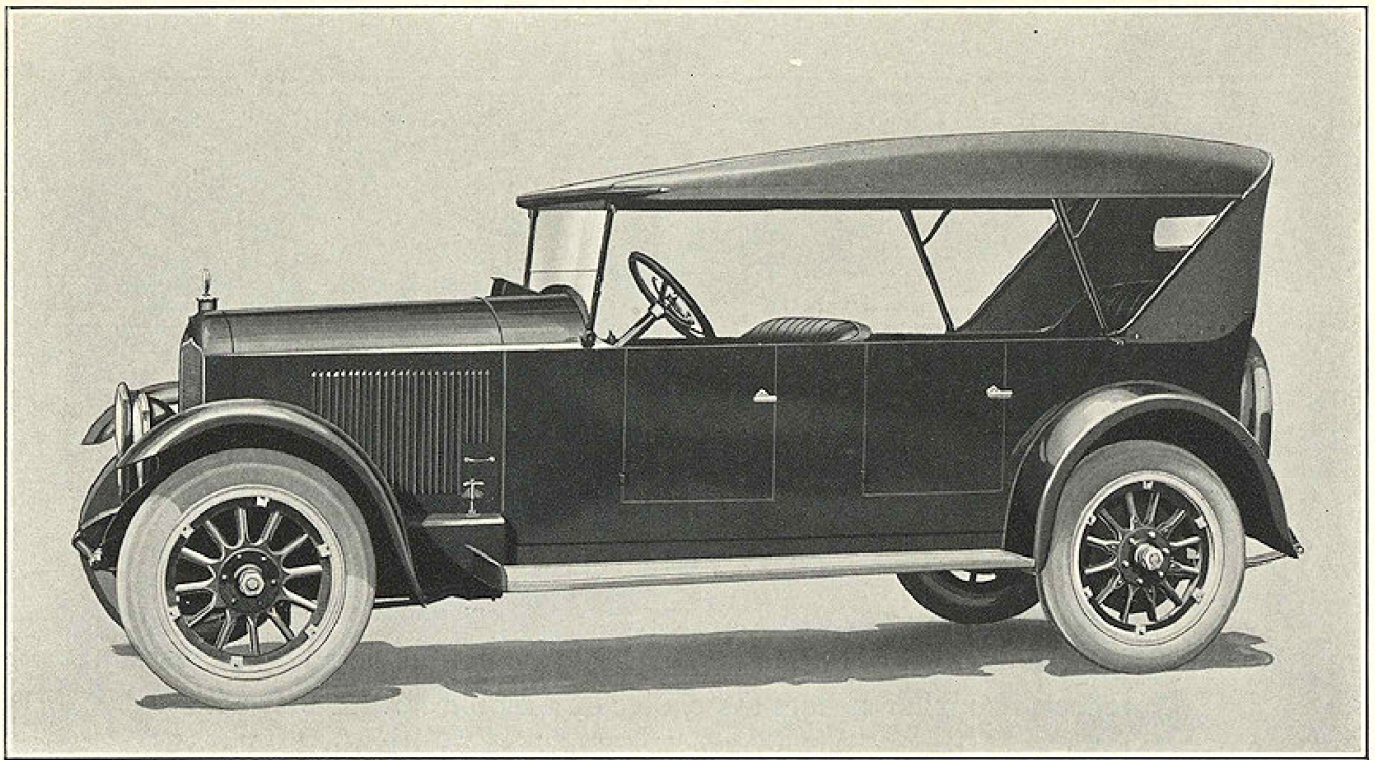
National Motor Cars are built for the owner who needs not skimp on the purchase price, but whose appreciation of real value enables him to differentiate between luxury and extravagance. It has been the privilege of National to satisfy this clientele for over two decades.

With the rich background of successful effort in this direction and the lessons learned through unparalleled victories on road, speedway and hill it is only natural that the present National should be a truly outstanding car.

National engineers built America's first six-cylinder motor car. Skilled in innovation and refinement, this same staff, today, is building America's foremost.

The present National is offered with confidence that it combines in greatest measure and most satisfying proportion those essential qualities that determine the true worth of any motor car—dependability, performance, ease of riding and driving, economy and style.

National permits gratification of the desire to own the utmost without violation of business judgment in the purchase price. It will be to your advantage to know National as an index of motor car value.



NATIONAL SEVEN PASSENGER TOURING

THE National Touring Car is rightly called a seven-passenger model. Though slim and narrow to the eye, because of the long, arrow-straight lines, the body is notable for generosity of room. All seats are built well below the upper edge of the body, giving a delightful feeling of security. They are tilted at just the right angle for lounging comfort. The auxiliary chairs are strong, substantial and easy to ride upon. They, too, are upholstered with genuine long-grain black leather, and fitted with comfortable folding backs. Bringing them from their hidden recesses in the center cowl or dropping them out of sight entails minimum effort.

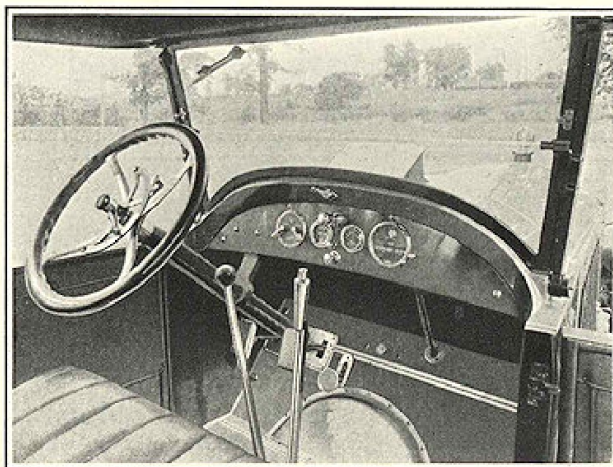
In the wide center cowl of the National Touring Car are three handy compartments, walnut-paneled and lock-fitted. They are large enough for the carrying of a kodak, a carton of cigarets, a box of chocolates and other essentials of the week-end trip or vacation tour.

Spacious pockets are provided in both tonneau doors and the right fore door for the storage of Blue Books, veils, gloves and goggles, veritable kit bags of generous bellows and depth, protected by large, dust-proof flaps. A robe strap of Cordovan is an artistic feature of the tonneau appointments, which also include a tonneau lamp that floods the rear compartment with a soft light, diffused through a lens of frosted glass.

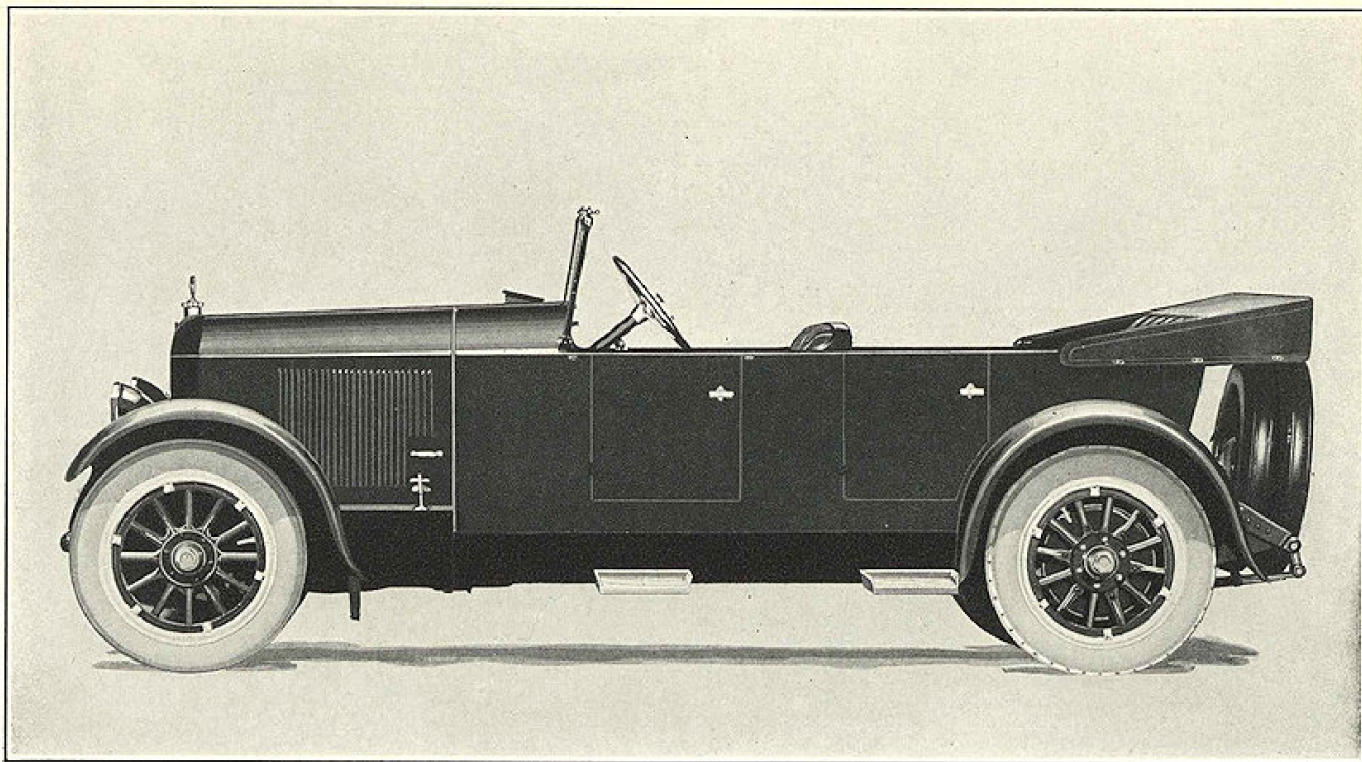
The rain-proof top is individually tailored, and lined inside with heavy gray cloth. Because it is not fastened to the bows, it is neither cracked nor crushed when folded. In inclement weather it is no trouble to enter or leave the car. The side curtains open with the doors.

Thick gray wool carpeting is used for covering the tonneau floor and the walls of both front and rear compartments. Heavy gray linoleum, bound with a wide aluminum moulding, withstands the extra wear in the driving compartment.

Although the National Touring Car is long, big and roomy, it is turned without gear shifting maneuver in a forty-foot street and can be handled with the utmost ease in the crush of city traffic.



Dash arrangement standard on Touring, Phaeton and Roadster



NATIONAL FOUR PASSENGER PHAETON

CHARMING individuality blended with rare good taste is the outstanding characteristic of the National Phaeton. Even when braked at the curb, the car looks its power and speed, for to the slenderness of a boulevard thoroughbred has been added the road-hugging lowness of a racing mount. The width of the National Phaeton has been held to the narrowest possible limits commensurate with the comfort of four passengers. The rear seat being no wider than the front gives the Phaeton an unusually neat and trim appearance.

The lengthening of the cowl emphasizes the Phaeton's fleetness of line and fitness for speed.

The windshield tilts at a rakish slant, and is wider at the top than at the bottom. It is so mounted as to be virtually an integral part of the body. The individually tailored top has perfect proportions and since it is not fastened to the bows, is not cracked or crushed in folding.

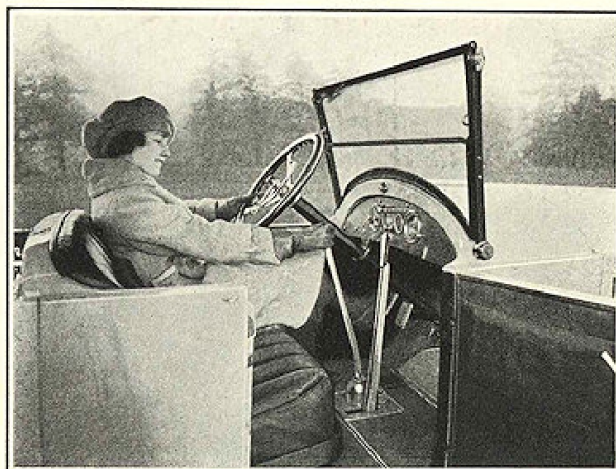
When seen head-on, the National Phaeton is like no other car you meet. The high, narrow radiator, topped by the motometer, has a distinctive design that is reproduced in the twin headlamps. The slender bow symbolizes speed and power that is realized in masterful performance.

Astern the Phaeton is trim and comely. A swell at the back forms a brief afterdeck. The gas tank is concealed behind a heavy sheet steel apron. No unsightly straps are used on the Yale-locked tire carrier.

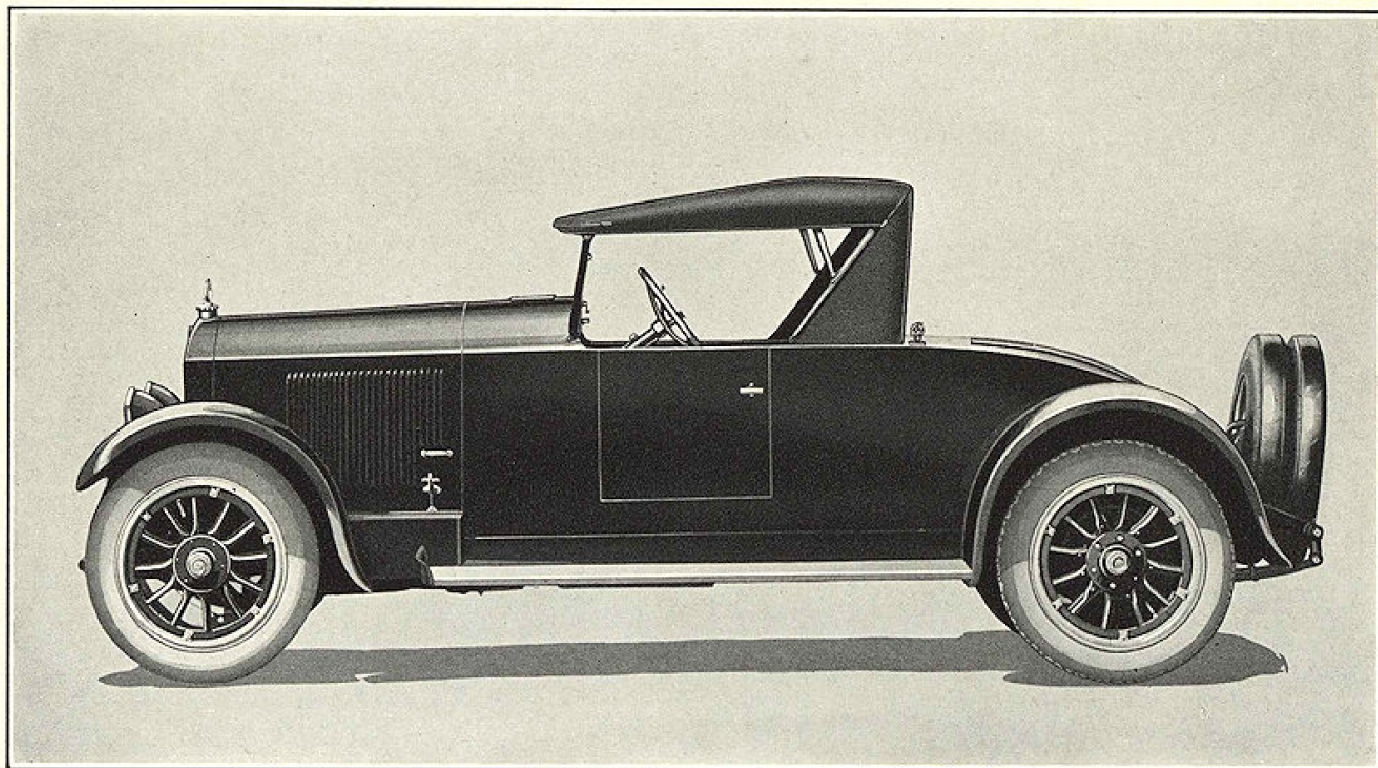
Every provision for touring has been made. Flap-concealed pockets are fitted in both tonneau doors and the right fore door. Lock-fitted compartments are built in the rear of the front seat. The tonneau floor is deeply carpeted. Thick linoleum is used for driving section floor.

Four persons ride in sociable proximity, but with luxurious freedom from crowding or cramping. There is generous leg room in both front and rear sections.

For the owner who desires to carry as a maximum four passengers the National Phaeton has in riding comfort, superior driving performance, remarkable beauty and style, a strong and permanent appeal.



Control levers require no change from easy driving posture



NATIONAL THREE PASSENGER ROADSTER

THE National Roadster, although designed particularly to meet the requirements of the sportsman, also meets the exactions of those men and women who prefer this type of car for city use. Whether it be viewed from the side, front or rear, the Roadster is exceptionally impressive in its low-hung smartness, with deep, flat body sides and sharp edges relieved of all severity by graceful curves. No freakish idea has been adopted to gain this distinction. Admirers of smart motor cars will recognize immediately that it is the entire car, rather than any one feature, that presents such desirable individuality.

A true gauge of the utility of the National Roadster can be had by an inspection of the equipment of this completely appointed car. Though the sportsman especially will see the provisions that have been made for his utmost convenience, the practicability of each feature can be fully appreciated by those seeking a car for less strenuous recreation.

Particular attention has been paid to luggage carrying. At the right of the afterdeck is a novel locked compartment especially designed to accommodate golf bag, guns, fishing rods and like sport equipment. There is ample space, too, in the lock-fitted afterdeck for the storage of week-end bags, suitcases and picnic hampers. At the back of the seat is another locked compartment for carrying robes, oilskins and sweaters.

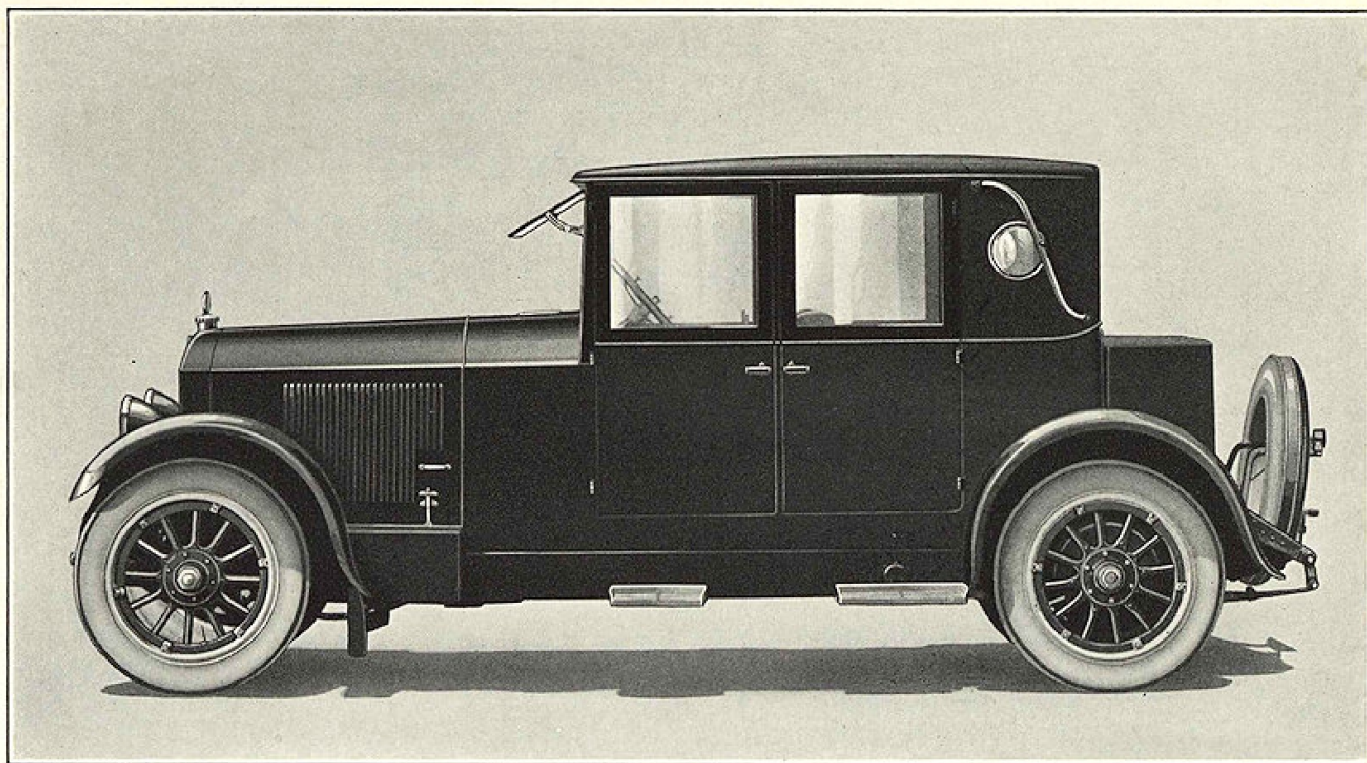
An auxiliary seat is provided in the afterdeck for the chance passenger, the caddy or the guide. The back of this seat, when folded, is flush with the top of the afterdeck. The steering column is inclined at a racing angle, with a wheel that yields to the lightest touch.

The farther you ride and the rougher the road, the more enthusiastic you will become over the superb riding qualities of this perfectly poised car.

In the National Roadster you enjoy the full heritage and benefit of its rich racing ancestry. This model is truly worthy of its nameplate.



Ventilator is easily and quickly adjusted from dash



NATIONAL CLOSE COUPLED FOUR PASSENGER SEDAN

DECIDEDLY one of the smartest models National has ever produced. The Close-Coupled Sedan provides for four passengers in a most complete and desirable fashion. It is suitable for the formal occasion where parked or driven alongside the finest coach work of America or Europe, it loses no luster by comparison, or is equally capable in the hands of the owner to whom a transcontinental jaunt is no longer a novelty. The body is specially built in the National shops of most rigid and substantial construction to endure unharmed the most severe road usage. The light but rigid top is one of the special features. Beautifully grained black leather is stretched over heavy sheathing on the rear upper quarter, and the combination of the round window and curved scroll joint gives an extra touch of smartness which is unusually good.

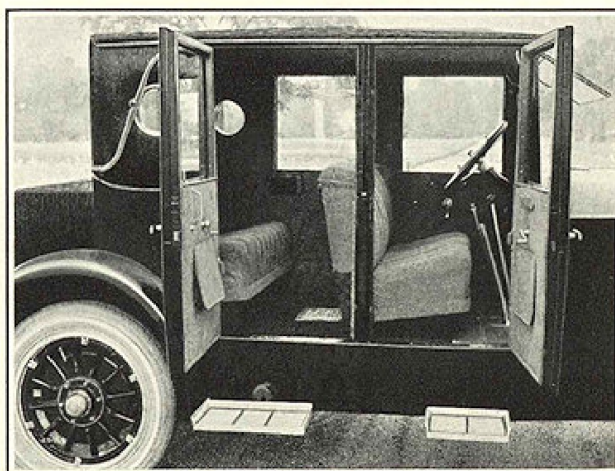
Seats are wide and deep, shaped to give the utmost driving and riding comfort. Upholstery is in rich cloth. Walls and ceiling are lined to match. Silk roller curtain provided for rear window.

Every provision is made for touring comfort as well as metropolitan style. A trunk accommodating two suitcases with cover is securely mounted on the rear, set off with round nickeled rods.

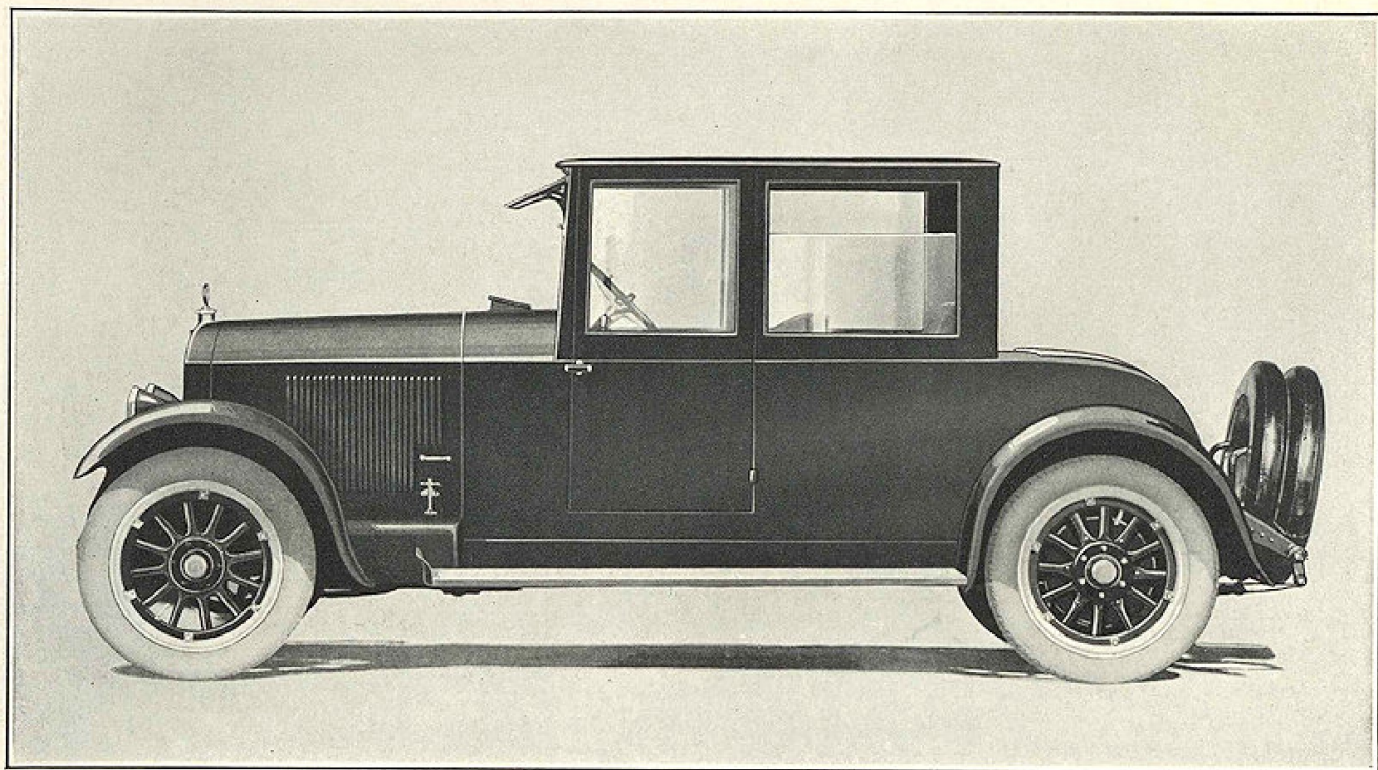
The four doors open wide, giving easy access to the luxurious interior. These doors are rattle proof and fitted with locking handles. Door pockets of silk are provided for the smaller impedimenta of touring, such as gloves and veils. Storage is provided also beneath both seats.

Other fitments include the dome light controlled by switch conveniently located, the exhaust heater mounted in the tonneau floor and ash tray fitted at the left of the rear seat.

Coupling as it does the latest mode of closed car design with the dependable National chassis, this model combines complete useability for four persons with distinction of body style that has never been excelled. It is as thoroughly capable as it is outstandingly smart.



A hint of the riding comfort in the Close Coupled Sedan



NATIONAL FOUR PASSENGER COUPE

QUIETLY elegant and correct in every detail of its appointment the National Coupe breathes an atmosphere of rare luxury and charm. At the same time full weight has been given to practical considerations and the varied capacity for service demanded in a car of this type. Back of the driver's seat there is a lid-fitted compartment of large size for the storage of wraps, hats or other articles. Physicians find this compartment especially useful. A silk pocket in the right door, concealed by a flap, is a source of daily convenience in carrying veils, gloves, and other small articles.

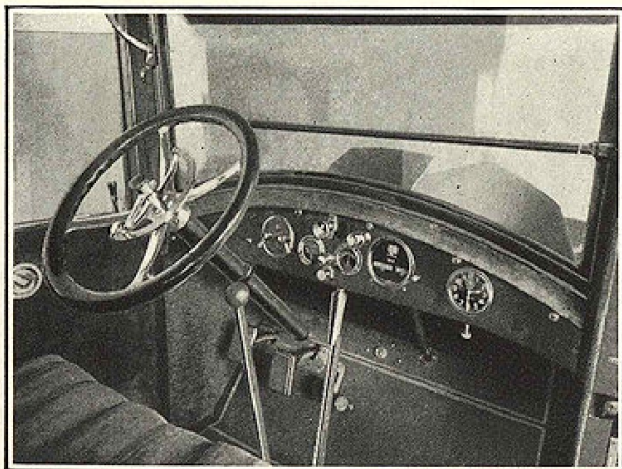
The temperature of the interior is easily controlled. Warmth, sunshine and fresh air can be enjoyed as you travel. An exhaust heater is installed in the floor, and a hooded ventilator, with dash control, is built into the cowl. The door and side windows may be raised or lowered to any desired height by means of mechanical controllers that lock automatically and hold firmly.

The windows are large, flooding the interior with light and affording perfect vision from within. Another extremely useful feature of the Coupe is the Yale-locked storage compartment in the afterdeck, of sufficient size to accommodate two suitcases, kit bags or a complete assortment of golf clubs. The lid is held securely by nicked rattle-proof toggle fasteners.

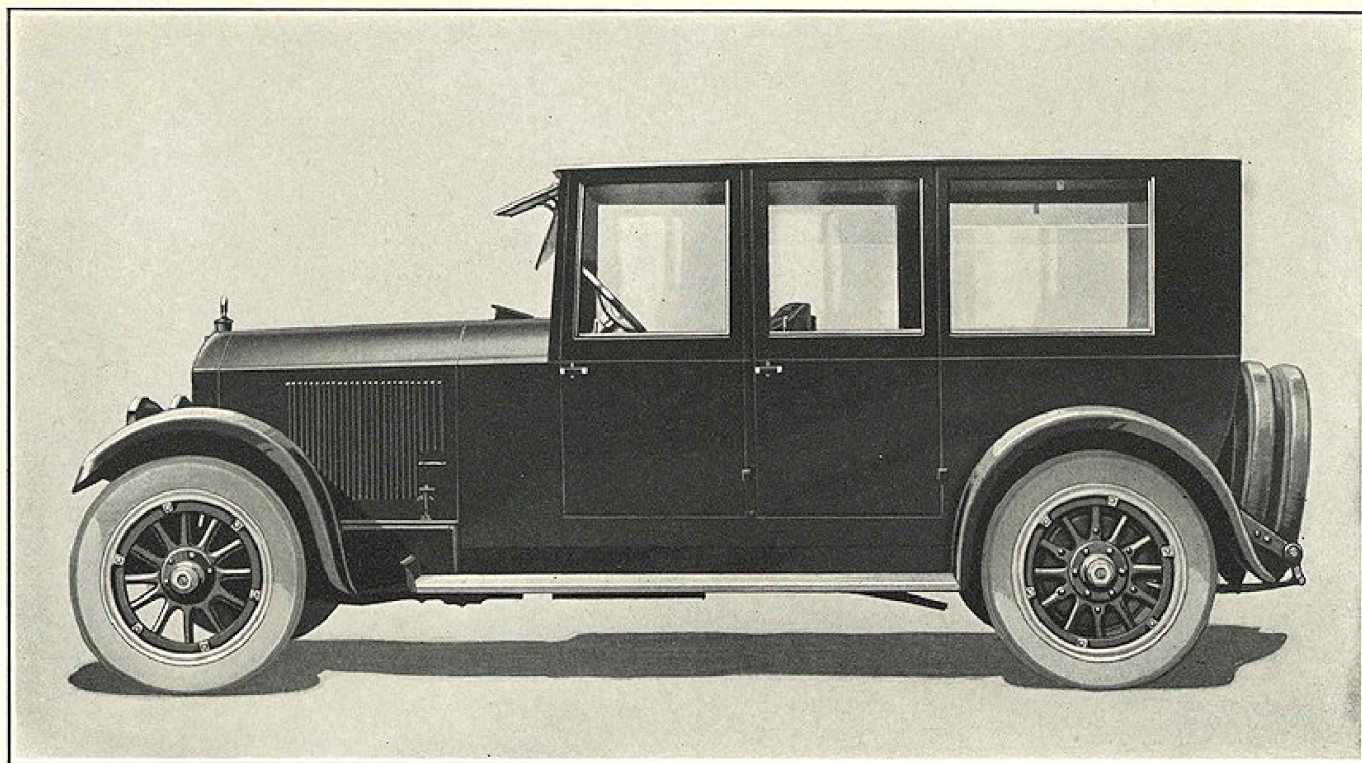
Side walls and ceiling are lined with the same material as that used for upholstery. Silk roll curtains are supplied. The upholstery is deep and luxurious. Heavy wool carpet is used on the floor. The toe boards are covered with aluminum-bound heavy gray linoleum to withstand the extra wear that they receive.

Silvered and nicked interior fittings are used, including all metal parts. The dome light and the bullet step light are controlled by a switch on the dash.

For the ordinary pursuits of business or pleasure, the cross-country trip or vacation tour, the year 'round comfort and utility of the National Coupe will commend it with overwhelming insistence.



Standard dash of Newports and Closed Models is regularly fitted with clock



NATIONAL SEVEN PASSENGER SEDAN

CLOSED car luxury has utmost expression in the National Sedan, whether you measure that luxury by body elegance, interior appointment, riding comfort, or ability in performance. The low-hung appearance of the car, due primarily to the deep sides, resulting from the National method of body mounting, is emphasized by the low crown of the roof and accentuated by the line extending the full length of the body. Comfortable breadth has been combined with an appearance of slenderness, a litheness and grace unduplicated in any other American closed car.

Complementing the upholstery, the lined side walls and ceiling, the carpeting and hangings are silvered and nicked fittings, such as control levers, door handles and instruments.

The octagonal dome light and the two corner tonneau lights are controlled from the tonneau.

In the sides of the rear compartment are a walnut vanity case and a combination match box and ash tray. At the back of the front seat is a lock-fitted compartment for small articles of value.

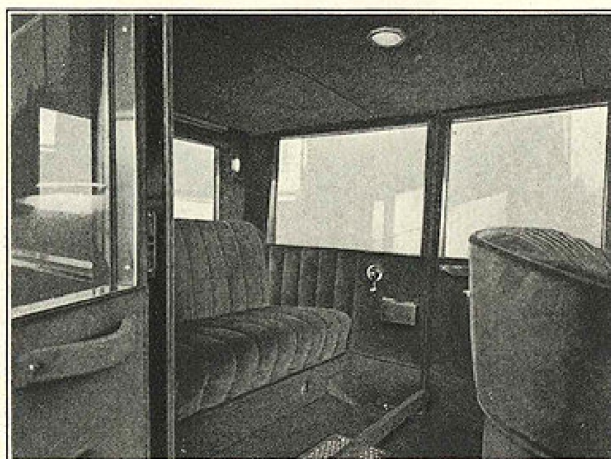
Women, especially, find the silken pockets in the right front and both tonneau doors a daily convenience. These pockets are concealed by a large flap.

Regardless of season or the weather, the temperature of the interior is easily controlled by means of the exhaust heater in the tonneau floor and a hooded ventilator, with dash control, built into the cowl. The door and side windows are raised or lowered by self-locking controllers.

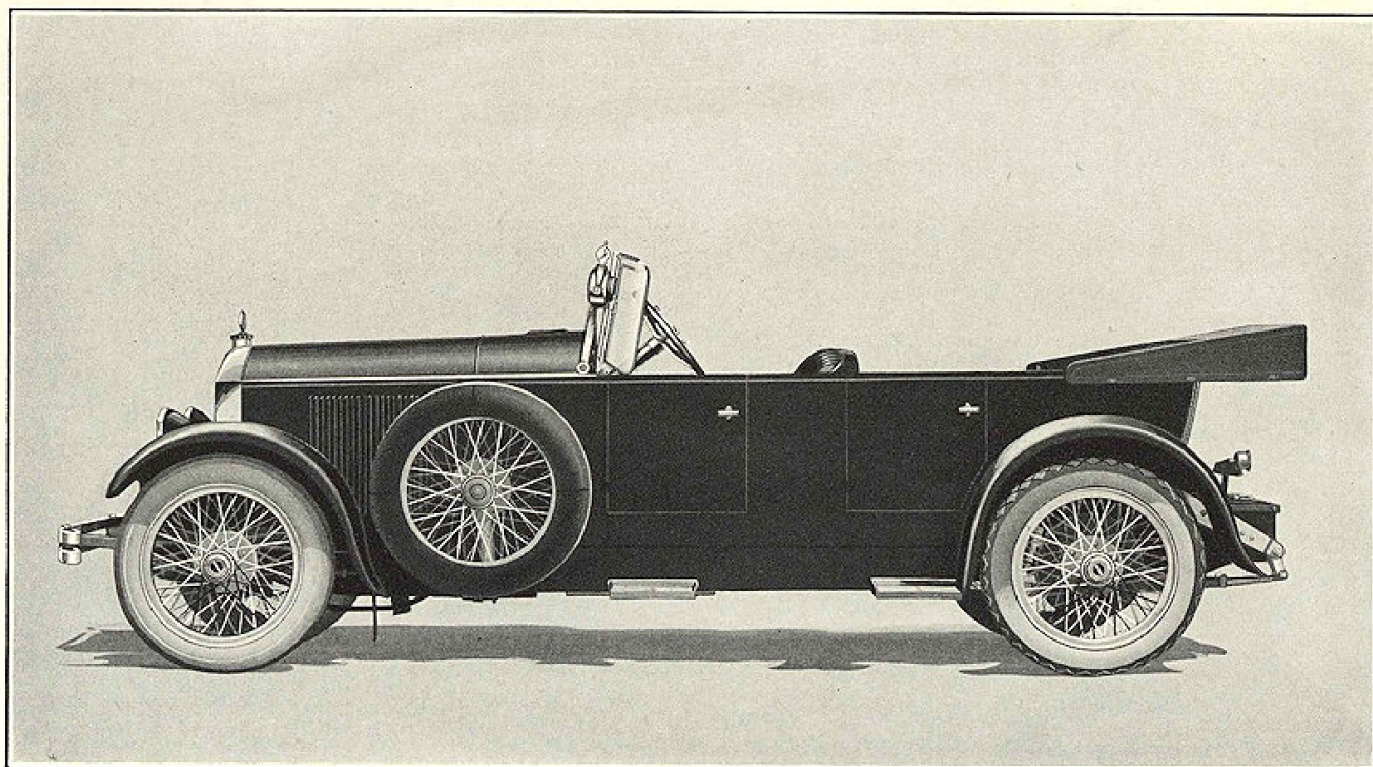
The windows are of unusual size, filling the interior with light and affording perfect vision from within.

The substantial auxiliary seats can be raised or folded out of sight easily. Their occupants face forward.

The luxurious National Sedan has that individuality and smartness that suit both the formal and informal occasions for which a car of this type is a necessity.



The Sedan is spacious, truly regal inside and out

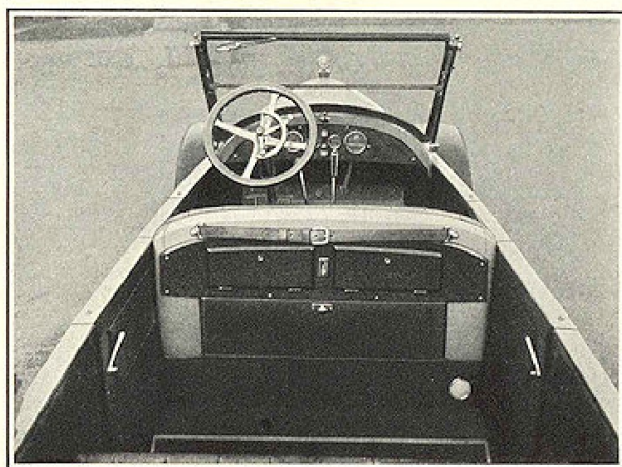


NATIONAL NEWPORT FOUR PASSENGER

IN sheer beauty of line and finish the National Newport Four-Passenger Phaeton matches well the dependability, the speed and power of the standard National chassis on which it is mounted. Starting with the regular National Phaeton as a basis, special fittings and finish have been added. The result is most unusual, attractive and distinctive, without freakishness or gaudiness. The special color scheme is lustrous ivory jet black for the body, with English vermillion under gear and stripes on the hood vents and around the contour line.

The top is special khaki-colored weatherproof cloth, mounted on natural wood bows with nick-eled fittings. At the front the nick-eled radiator and lamps complement the trunk rack and nick-eled trunk rods on the rear. Wire wheels are standard and finished to match the under gear. The two extra wheels supplied are mounted at the front, fitted with tires and black and vermillion tire covers.

For the deep upholstery and to accent the smartness of the top, black hand-buffed Spanish leather is used. Matching in tone the nickel so generously employed are properly placed individual cast aluminum steps. The nick-eled front bumper accentuates the fleet appearance.

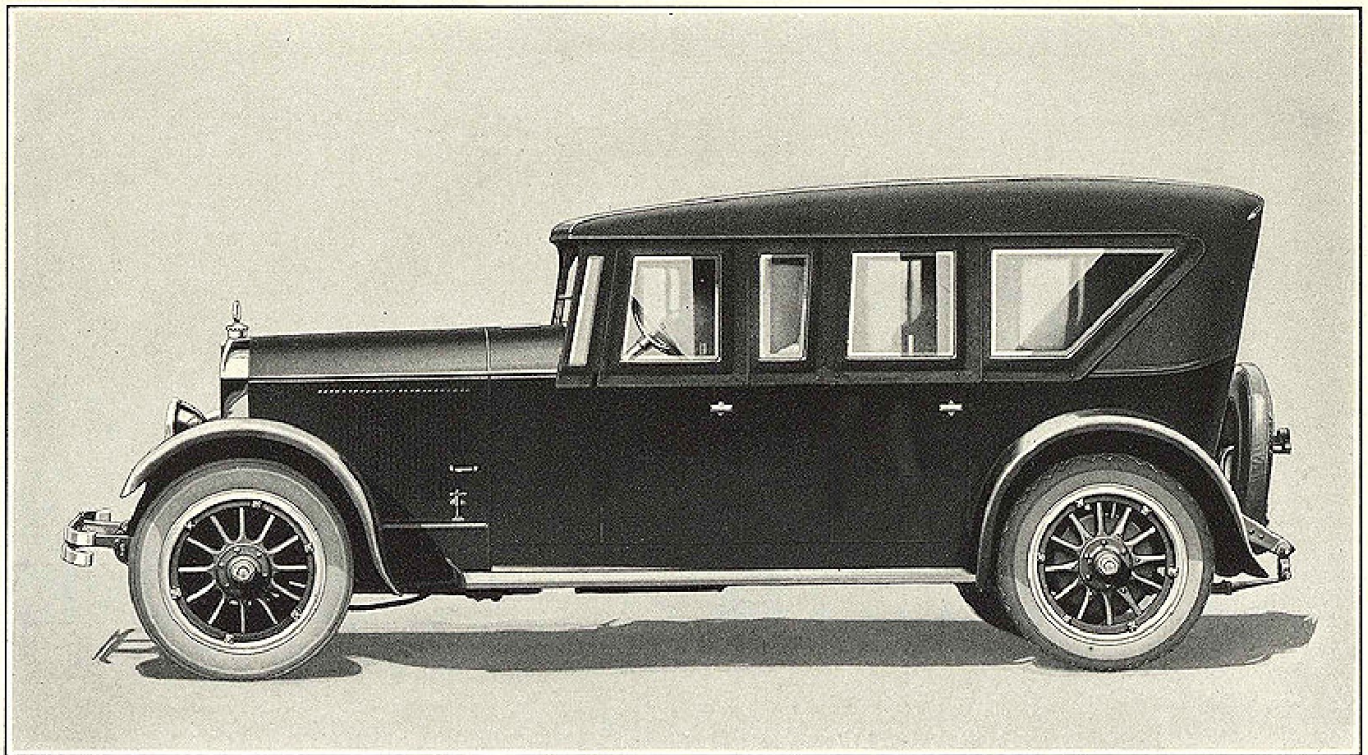


The four-passenger models are especially fleet of line

A jeweled clock supplements the regular equipment on the dash. Plate glass side wings add to the rakish windshield, and within easy reach is the spot light, also furnished as standard equipment.

The steering post, slanted at just the right angle for speed, the extra length cowl, the long, lithe lines of the entire assembly give promise, easy of ample fulfillment, of what you may expect should you care to unleash its generous power.

Although the National Newport Four-Passenger Phaeton has every attribute that makes it the center of attention, whether riding the boulevard, parked at the curb or country club, it has all the practical features that render it entirely satisfactory for strenuous cross-country touring or prosaic every-day service.



NATIONAL NEWPORT SEVEN PASSENGER WITH ALL SEASON TOP

SEDAN comfort with touring car performance is the keynote of the National Newport Touring. To the open touring car has been added a range of comforts and refinements usually found only in the more pretentious and expensive closed body styles. The Newport color scheme of ivory jet black and English vermillion has been followed, and nickeled trimmings generously used, such as on bumper, lamps and radiator. The special feature of the National Newport Seven Passenger is the all-season top, individually tailored and fitted to each particular car as an integral part. By this method a trimness and neatness is achieved that needs no apology and at the same time superior sturdiness of construction attained.

For winter use or in inclement weather the beveled plate glass side sections are used. For summer use they may be removed easily and supplanted by the conventional type of curtains.

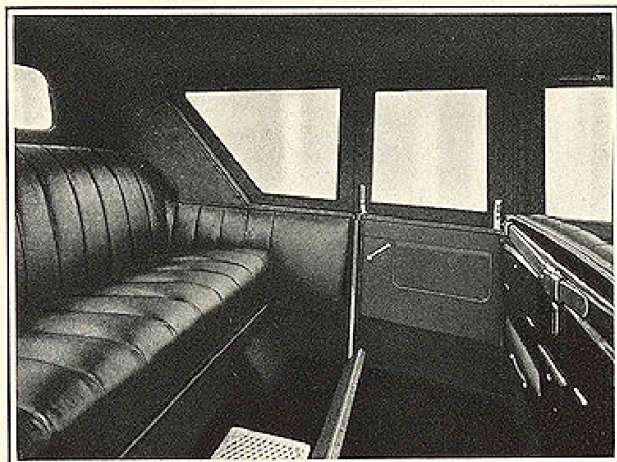
Particular attention is due the large plate glass windows of the rigid all-season top. These give complete vision from within, without change from easy riding or driving posture.

The interior is as attractive as the outside appearance. In the tonneau floor is fitted an exhaust heater, which, with the cowl ventilator and side ventilator sections, give complete temperature control regardless of outside conditions.

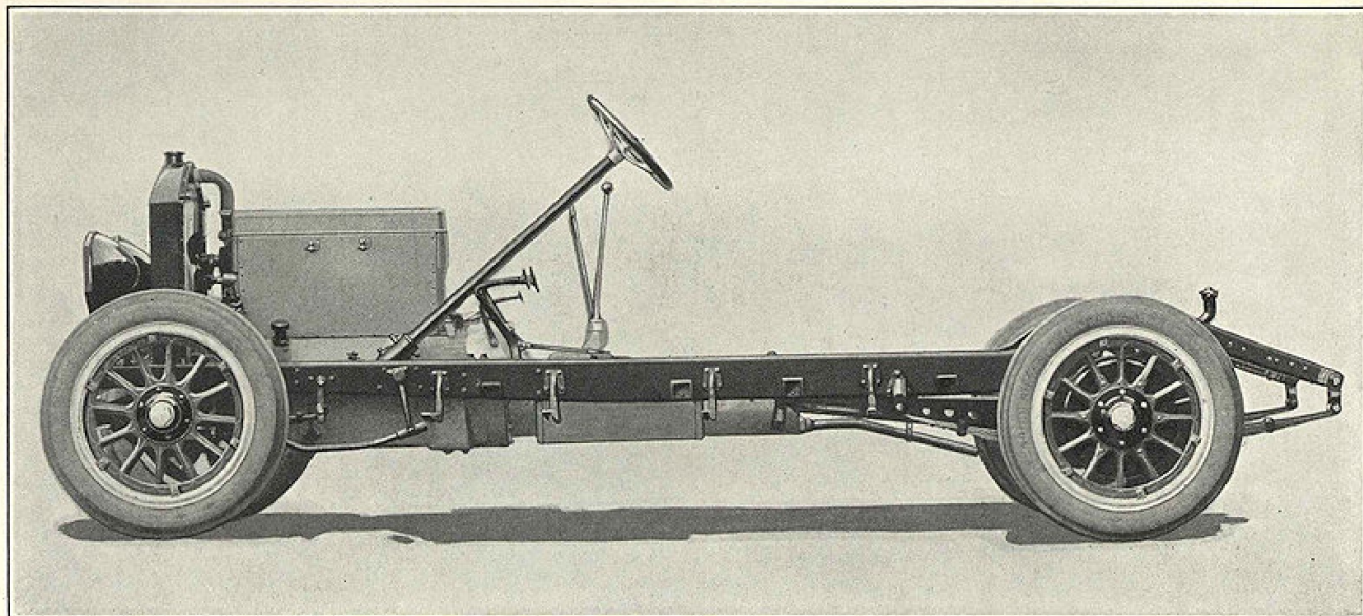
The top is lined with gray wool cloth. Long-grain leather is used for upholstery. The tonneau light, with conveniently located switch and the jeweled clock on the dash, complete the Sedan-like interior.

Every provision is made for the utmost ease and convenience of all occupants in this big, roomy car.

As an all-year-around car, for touring or social use, the trip to the office or the week-end country drive the National Newport Seven-Passenger Touring is especially desirable. It combines the luxury of the closed car for seven with the roadability of the open models. It provides comfort with less formality, yet for whatever purpose you own or drive your choice loses neither dignity nor aptitude.



The interior of Newport Seven-Passenger



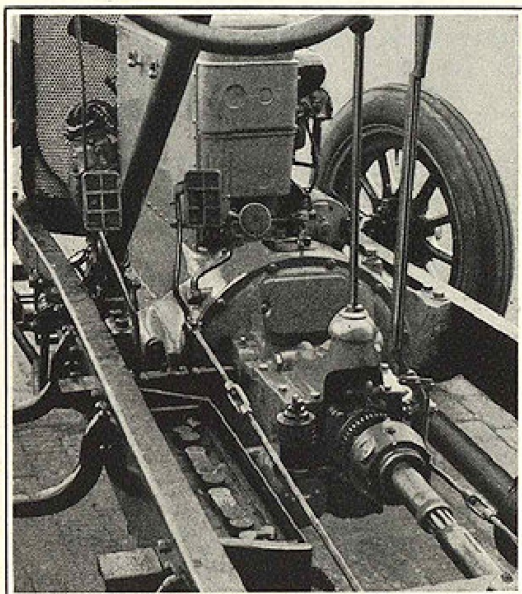
The National Chassis is as capable as it looks

Engine Excellence the Foundation of Chassis Merit

THE engine of the National marks a distinct advance in the science of motor manufacture. Measured by the standards that determine the true worth of any engine—power and economy, slow speed performance and instantaneous pick-up, resistance to wear and freedom from trouble, noise and vibration—the National engine, built entirely in the National shops, establishes a level of motor excellence exceptionally high.

How this unusual result has been achieved is a question that follows naturally and inevitably. The answer is found in three fundamental and basic reasons, augmented by a host of minor refinements and improvements, as follows:

1. Advanced overhead valve construction, embodying a new system of gas vaporization especially designed for the handling of low-grade gasoline, and utilizing to the utmost every available atom of fuel.



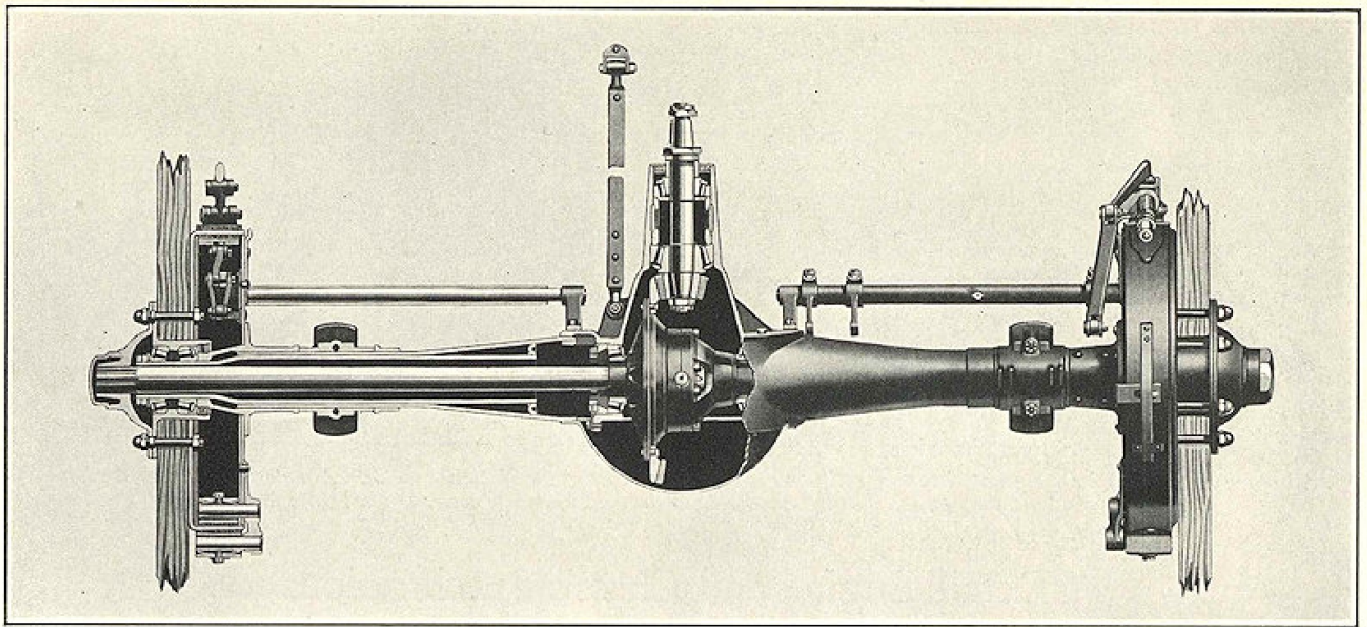
Power tire pump and speedometer drive are located at the rear of the transmission

2. Elimination of power waste through (a) reduction of friction through an improved system of lubrication; (b) lessening of the inertia of moving parts by a reduction in weight, which has its compensation in the use of the finest materials; (c) elimination of all shaft distortion and consequent binding action at the bearings, by the use of an extremely stiff and heavy crankshaft, accurately balanced.

3. Extremely fine and close workmanship, insuring perfect balance between all reciprocating parts, and an accurate fit and perfect alignment of all members, thus eliminating both power and friction losses throughout the engine.

Exceptional efficiency in the handling of low-grade fuels is attained in the National through the advanced and exclusive pre-heating system.

The success of the National engineers in the solution of this complicated problem of correct



The sturdy National Rear Axle has a one-piece pressed steel housing that reduces unsprung weight and increases riding comfort

pre-heating is best attested by the remarkable power developed by the National engine when run on low-grade gasoline. This power is attained with silky smoothness and without fuel troubles of even the most minor kind.

For starting in extremely cold weather, the National has an additional convenience in the form of an electric heater, attached to the carburetor, controlled by a primer button on the dash.

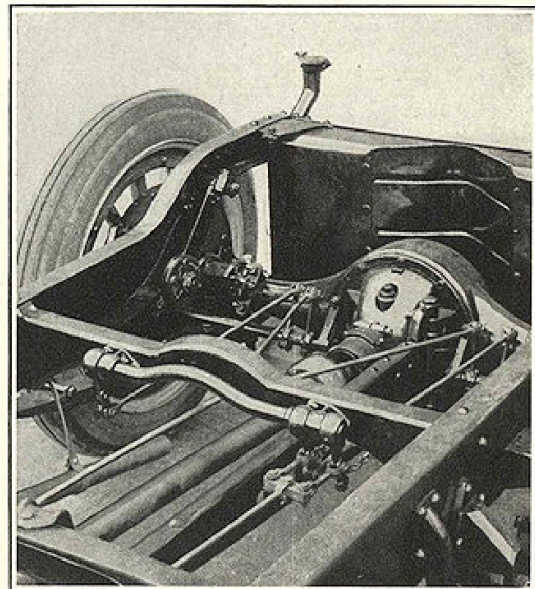
Tremendous power, exceptionally smooth, is not the only salient characteristic of the National engine. The motor also is remarkable for its endurance, and, with ordinary care, its life should be practically limitless, due primarily to the use of greatly oversize parts at all vital points of wear.

The lubricating system of the National is a marked improvement over common practice. The flow of oil is complete and continuous under constant pressure to each and every vital point of wear, including the overhead valve mechanism. This unique and thorough lubrication of the overhead valve mechanism eliminates premature wear and insures permanently quiet operation.

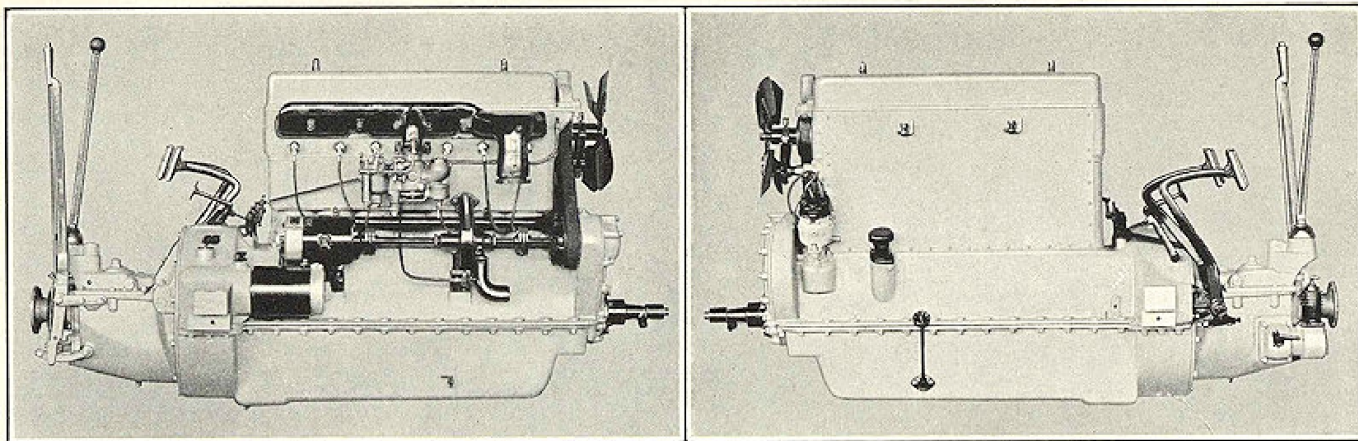
The oil is forced under pressure through the hollow crankshaft and other oil channels not only to all the main and connecting rod bearings, to the camshaft, and the accessory drive shaft, but to the overhead rocker arm shafts as well. The channels in the crankshaft are unusually large, and carry a generous volume of oil that effectively aids in the dissipation of bearing heat, in addition to providing efficient lubrication.

The pressure is maintained at a fixed point by a regulator at the forward end of the engine, the overflow from regulator lubricating timing chain and sprockets.

In addition to the splendid and responsive performance, the experienced motorist thoroughly appreciates the way that ready accessibility has been secured in the design and construction of the National engine. This makes possible the preservation of its original high efficiency over a long period of years with the minimum trouble and upkeep expense.



Twisting strains and road chatter are eliminated by I section pressed steel torque arm attached to rear axle



All operating accessories are grouped conveniently on the right hand side of the National motor. A motor light under the hood illuminates all working parts. The left hand side is clean. Removable covers conceal valve mechanism

Detail Engine and Chassis Specifications

ENGINE—Six-cylinder, high-efficiency, improved overhead valve construction, designed especially for handling low-grade fuels, and built complete in National shops under advanced methods of precision manufacture. With bore and stroke of only $3\frac{1}{2} \times 5\frac{1}{4}$ inches, engine develops 71 horsepower at 2,600 revolutions per minute, due to advanced method of handling fuel, reduction of inertia losses through use of light-weight reciprocating parts of highest grade material, and elimination of friction through extreme accuracy in alignment of parts and improved lubricating system. S. A. E. rating 29.4 horsepower.

CYLINDERS—Semi-steel, cast en bloc with detachable head, giving complete access to valves and combustion chambers, which are machined to hold uniform volume of fuel.

PISTONS—Close-fitting pistons of cast semi-steel, fitted with three rings holding compression at all engine temperatures. Weight less than 2 pounds.

CONNECTING RODS—I-beam drop forgings, extremely light and strong, with bronze-backed nickel babbitt bearings.

CRANKSHAFT—Extremely heavy and stiff, $2\frac{1}{2}$ inches diameter, eliminating binding action at bearings due to shaft distortion. Fitted with long-lived, extra large and long front, center and rear bronze-backed nickel babbitt bearings, $3\frac{3}{4}$, 3 and 4 inches long, respectively. Accurate balance weights forged integral with shaft eliminate vibration and give smooth performance at highest engine speeds.

CAMSHAFT—Drop forged, with integral cams, accu-

rately ground. Three large bearings insure rigid alignment and resultant accuracy of valve timing under all conditions.

VALVES—Special warp-proof steel alloy, with large opening, greater than $1\frac{1}{4}$ inches inside diameter; operated by double valve springs, giving quick opening and soft seating. Readily adjusted by special screw setting on ball joint of rocker arm.

VALVE MECHANISM—Completely enclosed by dust-tight and sound-proof aluminum dome and pressed steel housing, readily removed for inspection and adjustment.

ROCKER ARMS—Drop forgings of extreme fineness and light weight, mounted on hollow shafts through which oil is forced to bearings under pressure, eliminating wear and consequent noise of usual overhead valve construction. Spring spacers, holding rocker arms in place, permit easy inspection of bearing surface. Fingers of rocker arms are of unequal length in proportion of 3 to 2, increasing lifting effect of cams on valves and enabling use of cams of less height, with quieter and smoother valve action as result.

PUSH RODS—Light and extremely rigid, cupped at upper end to receive ball socket of rocker arm. Cup is automatically supplied with oil by direct lead from rocker shaft, giving permanent lubrication at this point.

TAPPETS—Inverted steel pistons forming automatic oil reservoirs into which spherical-bottomed lower ends of push rods are inserted. Construction permits removal of push rods without disturbing any other part of valve mechanism.

CRANKCASE—Two-piece aluminum crankcase, light and strong, with crankshaft bearings mounted in upper half for easy take-up after wear. Lower half removable, giving ready access to main and connecting rod bearings.

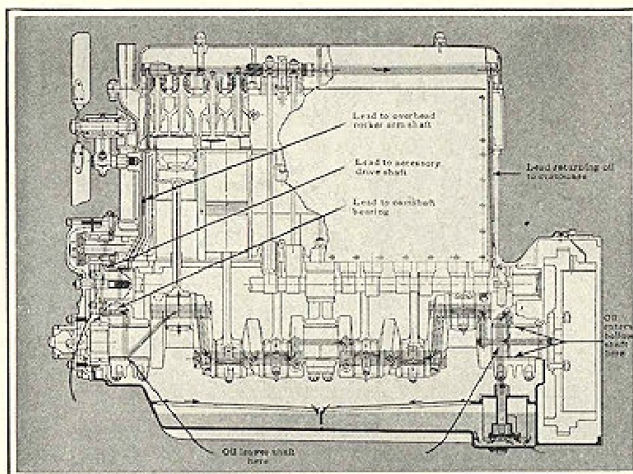
LUBRICATION—Improved system, providing complete circulation of oil under pressure to every vital wearing part. Gear oil pump in crankcase forces oil through hollow crankshaft. Alemite system and grease cups for chassis parts, springs, etc.

TIMING SPROCKETS—Driven by Morse silent chain, $1\frac{1}{2}$ inches wide, with special eccentric adjustment, to eliminate slack and compensate for wear, easily made by removing plate over eccentric.

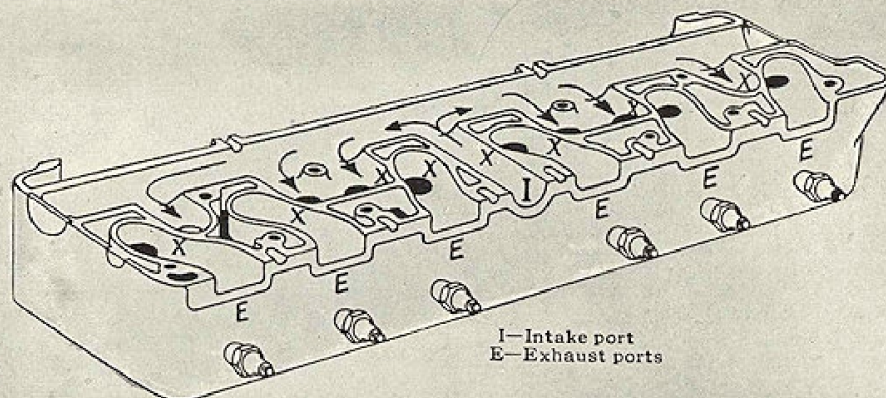
WINDSHIELD CLEANER—Pivoted squeegee windshield cleaner mounted on upper half of windshield within easy reach of driver.

VENTILATOR—Hooded ventilator on top of cowl operated by nicked thumbscrew above dash.

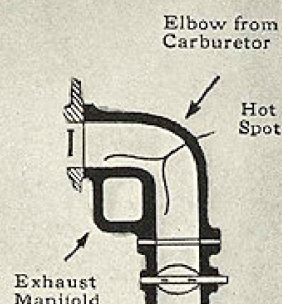
HOOD—Twenty-gauge steel, high and narrow construction, with flat tapering edge and high, narrow louvres in each side. Invisible hinges, no rivets. Substantial automatic spring fasteners with nickel bar handles, locking securely yet easy to manipulate.



Lubrication of the National engine is positive and complete. Oil is led to every point of wear including overhead-valve mechanism. This thoroughness insures long life and quiet operation



X—Common walls between intake and exhaust passages



National construction of the cylinder head and manifolds provides exceptional efficiency in handling present day fuel with consequent high mileage and freedom from carbon and crank case oil dilution

RADIATOR—Distinctive National design, black enameled. Improved diamond cellular ribbon type, painted white, unusually efficient and handsome in appearance.

COOLING—Positive pressure system with centrifugal pump and hexagon cellular radiator, individual tubes of which are easily removed for repair in case of accident. Capacity of system, 6 gallons.

FAN—Four-blade pressed steel design of maximum efficiency, 16-inch diameter, driven by flat, endless fabric belt, 1 1/4 inches wide, provided with easy take-up.

IGNITION—Delco distributor, driven by spiral gear from camshaft.

CARBURETION—Rayfield, 1 1/2-inch intake, with water-jacketed bowl and electrically heated primer for starting in extreme cold weather.

INTAKE MANIFOLD—Integral with cylinder head and water-jacketed so as to be entirely surrounded by heat. External elbow, connecting manifold to carburetor, is combined with exhaust to give hot spot at point of entry of gas into intake system. Amount of heat accurately proportioned to give maximum power and economy with low-grade fuels.

FUEL FEED—Stewart vacuum system, largest size tank mounted on reverse side of dash underneath hood.

STARTING AND LIGHTING—Westinghouse 6-volt single-wire system, with separate generator and starting motor, simply constructed and free from complication. Starting motor geared direct to flywheel by automatic self-disengaging drive.

BATTERY—Accessibly suspended on frame under removable front floor boards.

MOTOR LIGHT—On reverse side of dash under hood, enabling convenient inspection of engine accessories, all of which are grouped on right-hand side.

CLUTCH—Single-plate dry-disc type, 12-inch diameter. Simple construction, soft and positive engagement, easily adjusted.

TRANSMISSION—Unit with engine, selective type, three speeds forward and reverse. Nickel steel gears running in oil. Main shaft mounted on Timken roller bearings; countershaft on large ball bearings.

DRIVE SHAFT—Tubular construction, 1 3/4-inch outside diameter; light and extra strong, with two large internally lubricated universal joints.

FRONT AXLE—One-piece, I-beam drop forging, with taper roller bearings and nickel steel steering knuckles fitted with ball thrust bearings of hardened steel.

REAR AXLE—Full-floating type, with one-piece pressed steel housing, reducing unsprung weight and materially improving riding qualities. Fitted with noiseless spiral bevel gears running in oil and mounted on taper roller bearings. Axle shafts are splined, strongest

construction known. Differential and gears easily adjusted through removable axle cover at rear.

DRIVE—Through springs, with triangular torsion member to take up twisting strain, distinctive National feature.

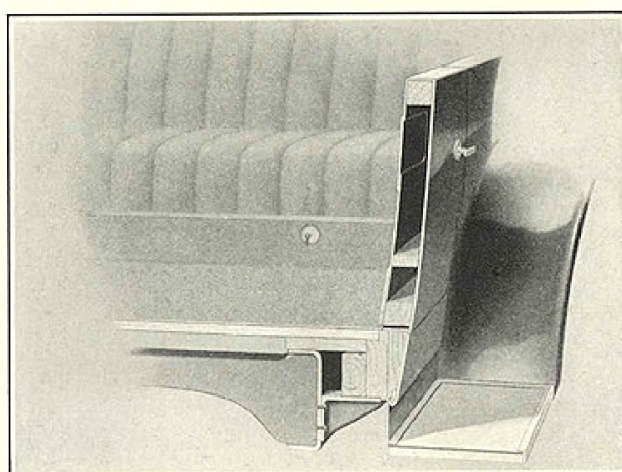
SPRINGS—Semi-elliptic, silico-manganese steel, extremely long and flexible; front, 38 inches long, 2 inches wide; rear, 60 1/4 inches long, 2 1/2 inches wide. Rear springs underslung, lowering center of gravity and reducing side-sway. Heavy Hartford shock absorbers front and rear. Alemite connections at ends of leaves on spring bolts. Oil cups front end front springs.

BRAKES—On rear wheels, with 16-inch drums, extra large, providing unusual factor of safety. Service brake external contracting 2 1/2 inches wide, operated by foot pedal; emergency brake internal expanding 2 1/4 inches wide, operated by emergency lever.

STEERING—Left hand, bronze worm and gear construction, with adjustment to take up lost motion and end play. Walnut wheel, 18-inch diameter, corrugated inside, with aluminum spider. Horn button on top of steering column.

CONTROLS—Emergency brake and transmission levers centrally located, extra long, 23 inches, reached without change of posture. Control pedals fitted with corrugated rubber foot pads. Levers are placed very conveniently so that use entails no change of driving posture.

THEFT LOCK—At foot of control levers on transmis-



The exclusive National patented system of body mounting gives triple strength, eliminates body noises, maintains a low center of gravity with consequent safety and comfort without sacrificing ample road clearance

sion. Key operating theft lock also operates electric switch on dash.

FRAME—Cold pressed steel of deep channel section, light and extra strong, tapering toward front end to give short turning radius.

BODY CONSTRUCTION—Rigid and most substantial of selected, kiln-dried hardwoods, with half-and-half joints, carefully glued and screwed together, braced and reinforced throughout with drop forged body irons. Will withstand severest usage without springing out of line or opening at corners.

SILLS—Solid hardwood, mounted on edge instead of laid flat, giving three times the strength with considerably less weight than the ordinary construction. Body held permanently rigid, eliminating squeaks and rattles. Patented and exclusively National.

BODY MOUNTING—On brackets riveted to outside of chassis frame, lowering body sides to within two inches of running boards, and eliminating the conventional high running board apron. Floor boards rest directly on frame, achieving greatest possible economy in height both inside and out. No sacrifice of ample road clearance.

VALANCE—Twenty-gauge steel, black enameled, bolted to body and running boards.

FRONT APRON—Deep splash apron of black enameled 20-gauge steel protecting radiator from water and mud. Opening for starting crank sealed with black enameled cap.

REAR APRON—Black enameled 20-gauge steel, concealing gasoline tank from view. Capacity gauge on tank and filler spout extend through openings in apron.

FLOOR BOARDS—Solid hardwood. Front floor boards removable, giving access to battery and transmission; covered with heavy, gray linoleum, bound at edges with wide aluminum moulding; held in place by nickel-plated studs and half-nuts, preventing rattles. Hand hole with pressed steel cover gives access to tire pump connection.

WHEELS—Selected close-grain hickory, artillery type, with demountable rims and aluminum hub caps. Disc wheels extra. Wire wheels extra except on Newport 22 Four-Passenger Phaeton.

FENDERS—Deeply domed, wide fenders of heavy sheet steel with high crown, rigidly mounted on heavy steel brackets and bolted in place. Rattle-proof construction. Front fenders individual, closely hugging wheel and separated from running board. Steel bar, running from one fender to the other, provides extra rigidity.

LAMPS—Special black enameled and nickel trimmed lamps conforming to radiator design, with integral auxiliary lamps underneath for city driving. Fitted with non-glare lenses and mounted on individual standards securely bolted to frame.

TIRES—Straight side cord, 32 x 4½-inch, standard ribbed front and non-skid rear.

TIRE CARRIER—Special thief-proof tire carrier at rear, fitted with Yale padlock. License and tail lamp brackets integral. Front wheel mounting extra except on Newport Four-Passenger.

RUNNING BOARDS—Three-piece construction—shrink and warp-proof—covered with heavy, gray linoleum bound at edges with aluminum moulding, regular equipment on Touring, Roadster, Coupe and Sedan. Cast aluminum steps regular equipment on Phaeton, Newport Four-Passenger and Close-Coupled Sedan. Running boards optional on these models, no extra charge. Steps on Roadster, Touring, Coupe and Seven-Passenger Sedan extra.

TANK—At rear of frame, protected by enveloping cross member against collision and concealed by splash apron of 20-gauge steel, with sliding cover revealing capacity gauge on tank. Filler opening at right. Emergency reservoir gives 1½ gallons additional fuel supply when main tank is empty.

INSTRUMENT BOARD—Finished in walnut, with nickel-plated instruments, illuminated by dash light—70-mile-an-hour magnetic speedometer. Sargent-locked electric switch, ammeter, oil gauge, and carburetor choker and electric primer buttons. Dash lamp removable for connection of trouble lamp. Sedans, Coupe and Newports have jeweled eight-day Waltham clock as standard equipment at no extra cost.

TIRE PUMP—Mounted on transmission, with connection accessible through hand hole in front floor boards covered by removable steel plate.

SPEEDOMETER DRIVE—On drive shaft at rear of transmission, transmitted through flexible shaft.

DIMENSIONS—Wheelbase, 130 inches, on all models, giving ample length for the mounting of spacious bodies for all models. Tread, 56 inches.

TURNING CIRCLE—Twenty-foot radius.

BODIES—Custom built.

COLORS—Option of National blue, green and gray. Special nickel, silver and gold fittings and special colors at extra cost. Genuine coach finish applied in twenty-four operations on all models. Fenders, running board, valance front and rear splash aprons and lamps black enameled, standard. Other finish extra.

UPHOLSTERY—Double non-sag cushion springs of finely tempered steel, giving unusual riding comfort. Stuffed with genuine curled hair, long-grain black leather regular on Touring, Phaeton, Roadster and Newport Seven-Passenger. Striped mohair velvet or gray, striped automobile cloth standard for Coupe, Four-Passenger and Seven-Passenger Sedan. Black Spanish leather standard for Newport Four-Passenger. Other than standard materials at extra cost.

EQUIPMENT—Full complement of tools, extra demountable rim and improved screw jack. Newport Four-Passenger has two extra tires with covers and wheels. Newport Seven-Passenger has extra tire and cover. Standard equipment of other models does not include extra tires, but includes one extra rim, motometer, large size electric horn, muffler cut-out, Hartford shock absorbers, front and rear. Engine light under hood standard on all models, no extra charge.

We reserve the right to make changes in construction and equipment as we see fit at any time, without obligation to make corresponding changes on cars previously sold or shipped

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